


# Turkish Journal of Physics

Turkish Journal

A Study Of Direct Two-Proton Transfer Reactions Using Optical Potential Model

of  
Physics

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**Abstract:**  $^{12}\text{C}$ ,  $^{26}\text{Mg}(^3\text{He},n)$  reactions have been studied at high bombardment energy with evaluation of the differential cross sections to the ground and the first excited states evaluated in the framework of the exact finite-range Born approximation (DWBA) calculations using the optical model. With the constraint that bound-state interactions have a Thomas-Fermi spin orbit form, different formations of the bound-state wave functions are explored. The calculated angular distributions are found to be in a good agreement with the experimental data. The present DWBA predictions are normalized to give the best overall fits to the data. The extracted spectroscopic factors are reasonable.

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Turk. J. Phys., **27**, (2003), 241-246.

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